TRI-AGENCY FORECAST DISCUSSION FOR JULY 26, 2010

Tropical Areas of Interest Discussion: Created 1800 UTC July 26, 2010

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Summary: The Atlantic Basin is fairly quiet today and all indications point to a quiet forecast for the next 48-72 hours. Deep layer easterlies exist from the central Atlantic Ocean all the way to the Gulf of Mexico. Moderate to strong northwesterly shear dominates the western GOM and moderate Westerly shear extends from the central Caribbean all the way into the Atlantic to nearly 50*W, south of the large ridge extending from the westward propagating Subtropical high to the Azores high. A very large region of SAL dry air covers the central Atlantic through the central Caribbean suppressing convection therein, and continues to move westward. Ahead of the dry air, and moving over the Yucatan Peninsula, is one tropical wave (ex-PGI-18L whose "pouch" was discontinued 4 days ago) with associated convection that has been flaring throughout the morning today. This wave is in a region of upper level diffluence supported by upper ridging and is south of an upper level low that dominates the central GOM providing showers and thunderstorms in the nearby region. In the Atlantic, PGI-19L and PGI-20L are both suffering with barely any deep convection associated with either of these features and although broad low-level cyclonic flow is present with each of these systems, the global models are not predicting either of these systems to undergo genesis in the next 48 hours. Discussions today focused on a possible upcoming GRIP microphysics mission into Gulf of Mexico convection, rather than on any possible genesis targets.

Forecast for 1800 UTC 7/26/2010:

The NHC currently has no targets for formation potential in the next 48 hours in the entire Atlantic basin. The GRIP/IFEX/PREDICT domain has little more than scattered western Caribbean and Eastern Gulf of Mexico convection, a couple of upper level lows, the 1022 hPa westward-moving Subtropical High, and three easterly waves- only one of which is associated with any deep convection (*see **1 and 2***). The first tropical wave is located along 89W over the Yucatan Peninsula, and was the previously named PGI-18L (discontinued 4 days ago). This wave is embedded in a large region of deep layer moisture evident in water vapor imagery (*see **3***) as well as TPW imagery (*see **6***), and is also experiencing good upper level diffluence associated with the nearby ridging. Thus, good deep convective flare-ups have been seen all day with this system. A second tropical wave associated with PGI-19L is located in the central Atlantic near 45W south of 18N. This is currently embedded in dry, stable SAL air at mid-levels, suppressing convection (*see **4***). TPW shows the wave leading a maximum in deep layer moisture, along which the ITCZ is analyzed (*see **6***). Broad cyclonic flow is still evident in satellite imagery of the associated stratocumulus (*see **2***). The third tropical wave is located from 19N,25W to 11N, 27W, just behind where PGI-20L is currently analyzed by the Montgomery group. Although TPW imagery indicates that PGI-20L is associated with a good amount of deep layer moisture, there does not seem to be the deep convection one would expect with this system based on its convective history (*see **Hovmöller, 8***). The vorticity analysis (*see **7b***) for this storm has been placed differently in the initialization of each global model, with the ECMWF coming closest to what has been evidenced by satellite winds and IR imagery (*see **5***). It is for this reason that the ECMWF forecast for this system is being trusted more than the forecasts for the pouch by any other global model (see discussion below).

Elsewhere in the tri-agency domain, the water vapor imagery is useful to show evidence of the 2 upper level lows- one over Texas and one dominating the northern GOM- as well as to show that the central Atlantic all the way through the Caribbean up to around 50W is being dominated by dry SAL air aloft (*see **3 and 4***). The wind shear analysis of the tri-agency domain shows moderate to strong northwesterly shear over the western half of the GOM through the western Caribbean, and moderate westerly shear stretching from the central Caribbean to central Atlantic just ahead of PGI-19L, which is located in a region of low shear (*see **7a***).

The global models (*link **10a***) are tracking PGI-20L for a few days without any intensification in the forecast, but are not showing any development potential at all for PGI-19L. The 850hPa vorticity maximum associated with the tropical wave over the Yucatan Peninsula is not developed by any model at this time(*see**7b***). The North American view of the ECMWF (*link **10b***) forecasts a broad area of "troughiness" over the Caribbean out to 48 hours and then doesn't develop any other features thereafter. Pouch tracking using the ECMWF (for the aforementioned reasons) for PGI-19L shows the system decaying within one day (*see **9a***), and with PGI-20L the ECMWF forecasts the pouch to encounter unfavorable deep vertical shear, and slowly dissolves this system over 84 hours with steadily decreasing values of both Okubo-Weiss and 700hPa vorticity (*see **9b***).

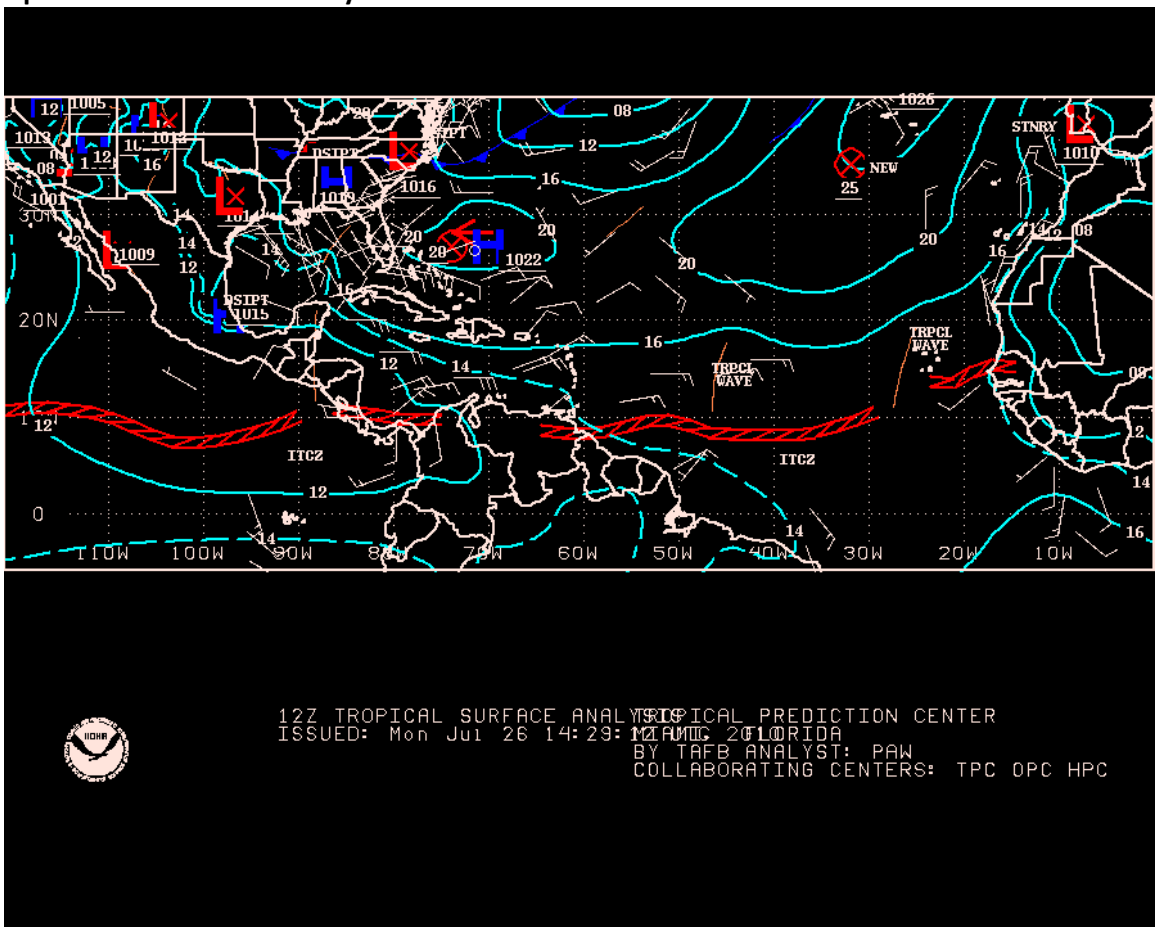
For tomorrow's tentatively planned microphysics mission, convection is forecasted to form mostly well west of the FL peninsula and should be located closer to the WSR-88D radars along the northern central Gulf coast with the steady western progression of the upper level GOM low, as well as the westward progression of the subtropical high and the dry air creating drying conditions over most of FL tomorrow.

Links to resources used in discussion:

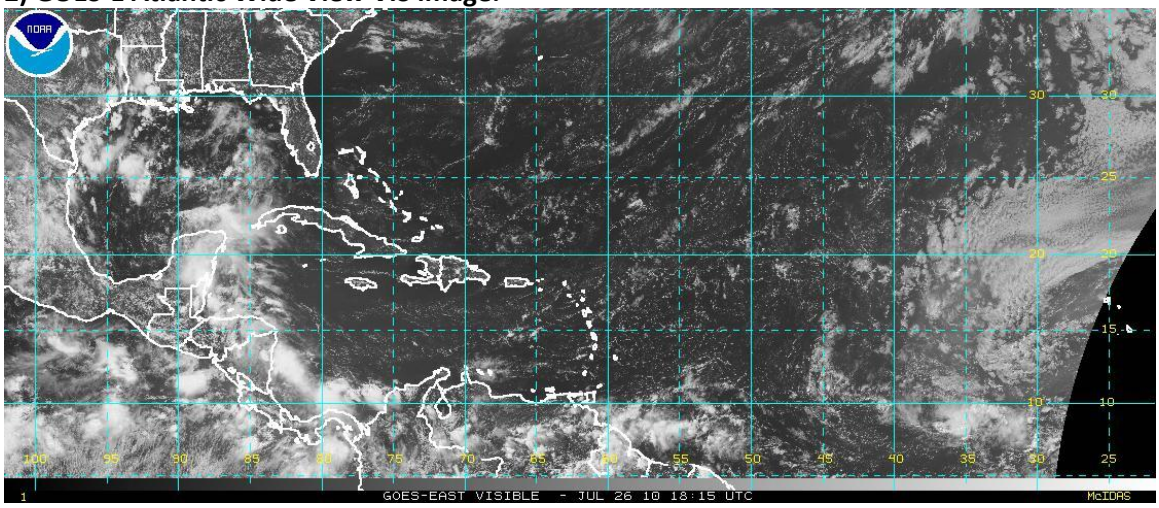
1: 1200 UTC TPC analysis http://www.nhc.noaa.gov/tafb/ATSA_12Z.gif
2: GOES-E visible Atlantic wide view : http://www.ssd.noaa.gov/goes/east/tatl/vis-l.jpg
3: GOES-E Atlantic Wide view of Water Vapor: http://www.ssd.noaa.gov/goes/east/tatl/wv-l.jpg
4: CIMSS SAL analysis: http://cimss.ssec.wisc.edu/tropic2/real-time/salmain.php?&prod=splitEW&time=
5: Meteosat IR image of PGI-20L: http://www.ssd.noaa.gov/eumet/eatl/avn-l.jpg
6: TPW analysis from JPL: http://grip.jpl.nasa.gov/sgrip/
7a and 7b: CIMSS Wind Shear Analysis and vorticity (850hPa): http://cimss.ssec.wisc.edu/tropic2/real-time/windmain.php?&basin=atlantic&sat=wg8&prod=shr&zoom=&time=
8: Hovmöller 5-day diagram from Meteosat: http://www.nhc.noaa.gov/tafb_latest/m9hov1latest.gif
9a and 9b: Montgomery Analysis of PGI-19L in ECMWF (9a) and Analysis of PGI-20L in ECMWF (9b), both at 700hPa: http://www.met.nps.edu/~mtmontgo/storms2010.html
10a and 10b: Global model forecast links: http://moe.met.fsu.edu/tcgengifs (10a) and http://www.ecmwf.int/products/forecasts/d/charts/medium/deterministic/msl_uv850_z500!Wind%20850%20and%20mslp!48!North%20America!pop!od!oper!public_plots!2010072600!!/ (10b) ECMWF

Static Images used in discussion:

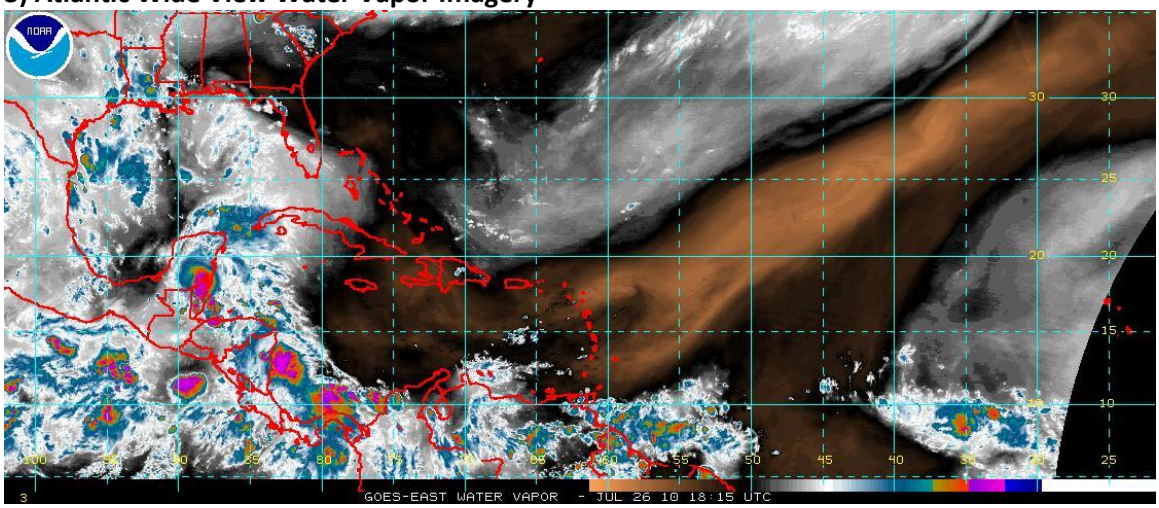
1) **Updated 1200 UTC TPC analysis**



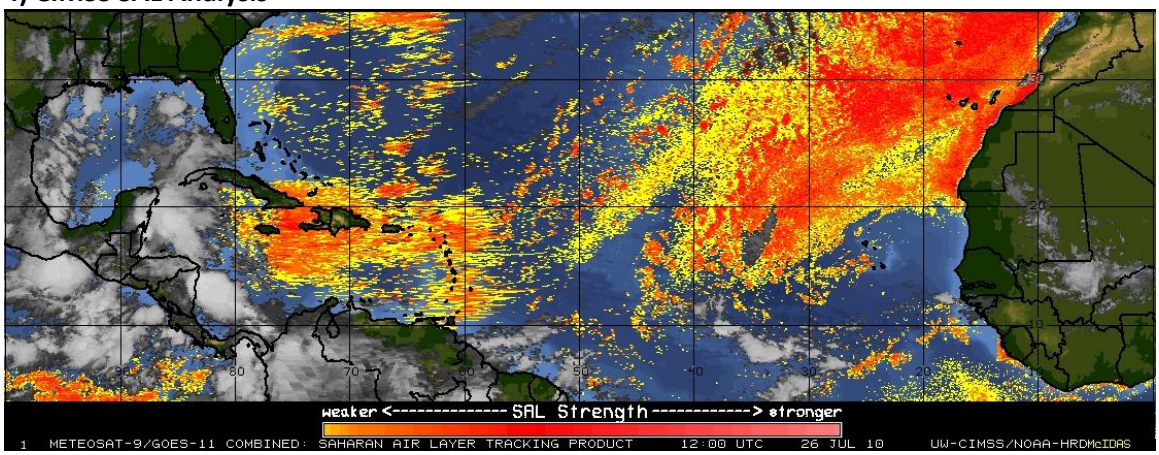
2) GOES-E Atlantic Wide View VIS image:



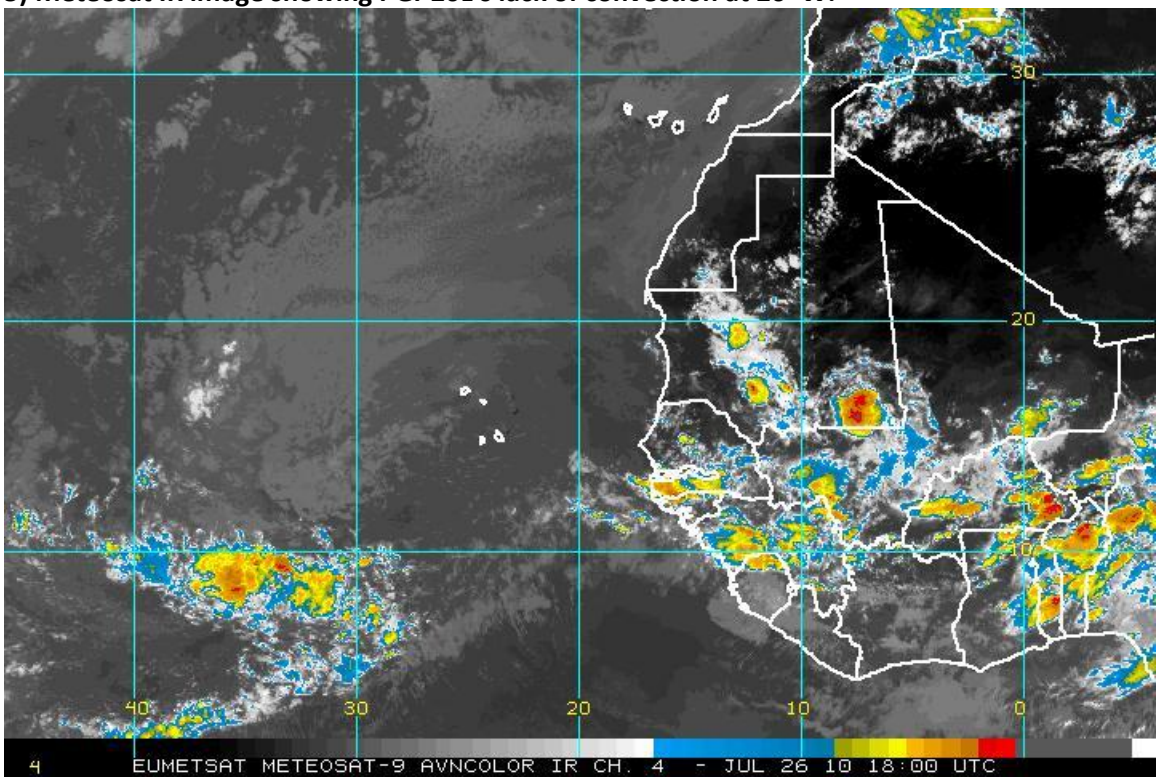
3) Atlantic Wide View Water Vapor Imagery



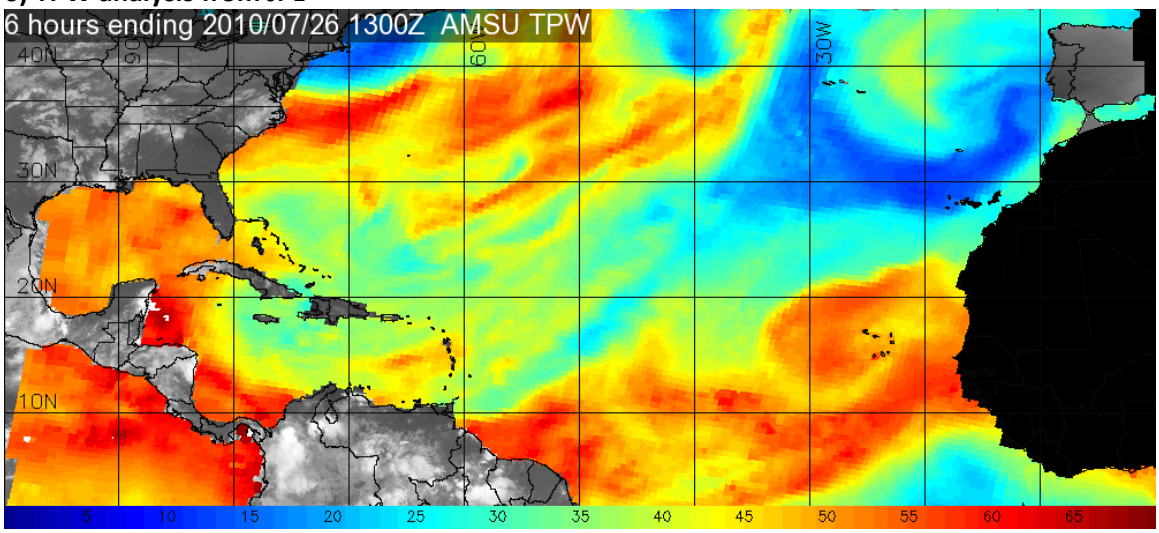
4) CIMSS SAL Analysis



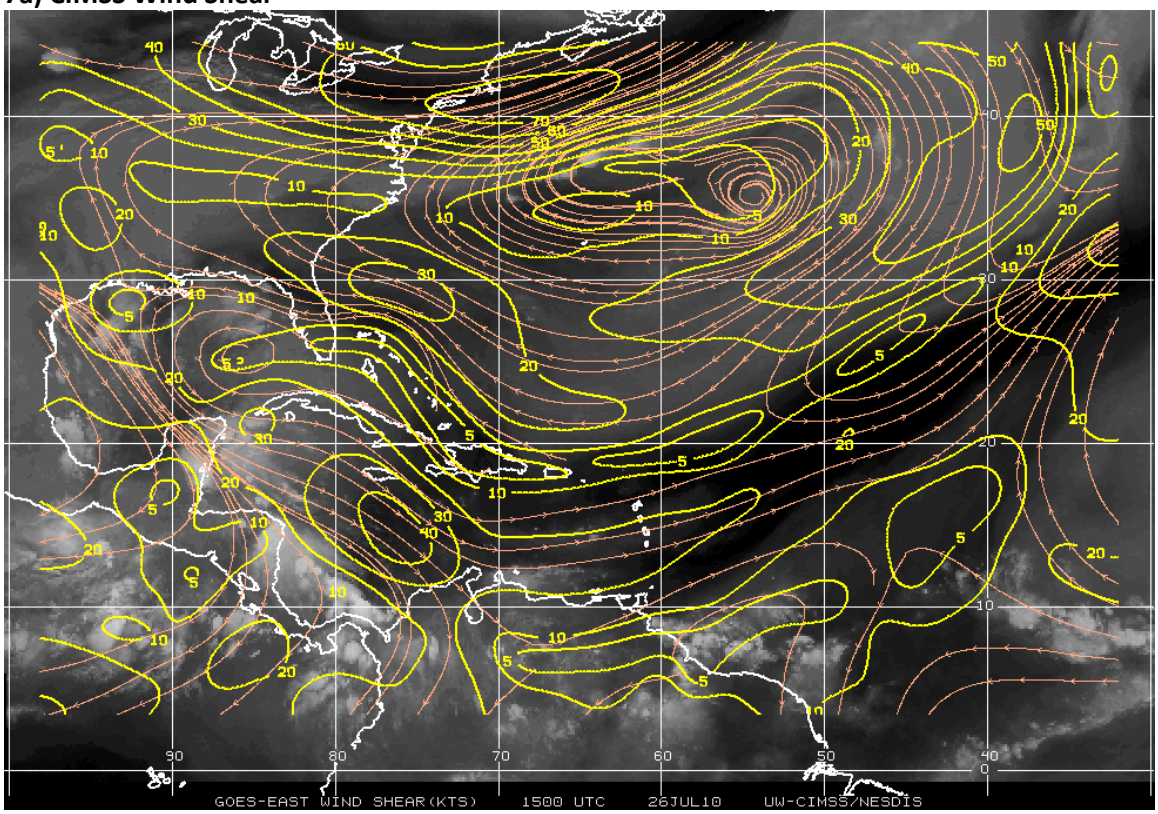
5) Meteosat IR image showing PGI-20L's lack of convection at 26*W:



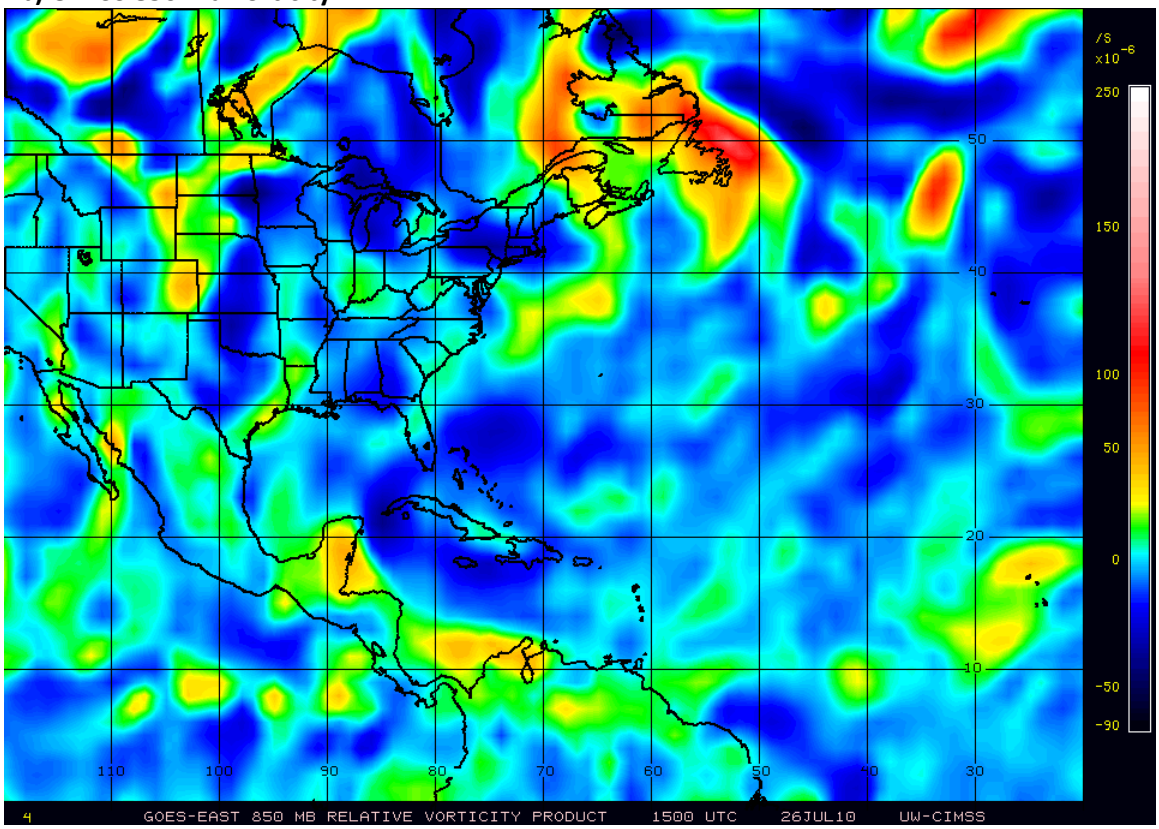
6) TPW analysis from JPL



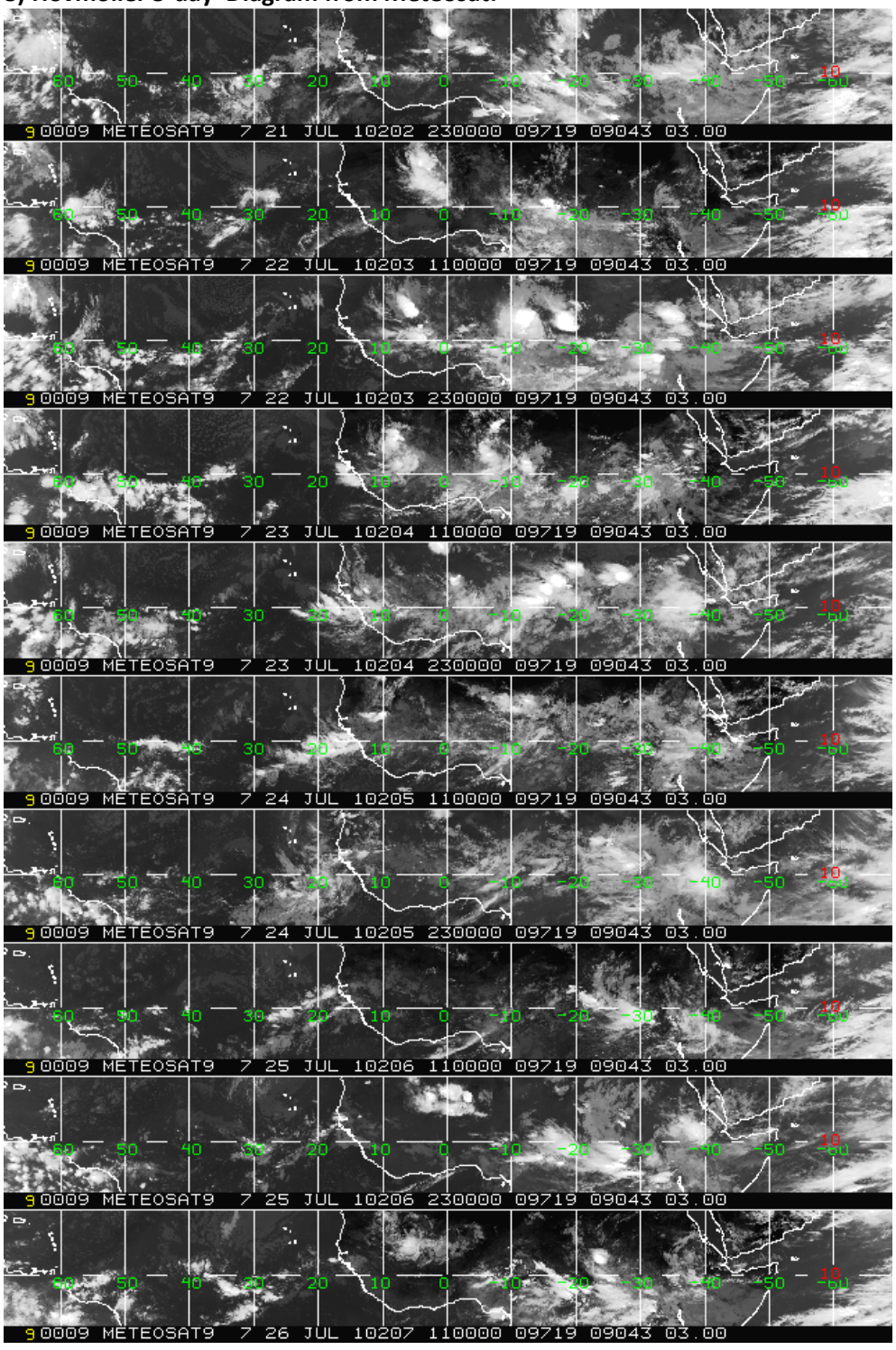
7a) CIMSS Wind Shear



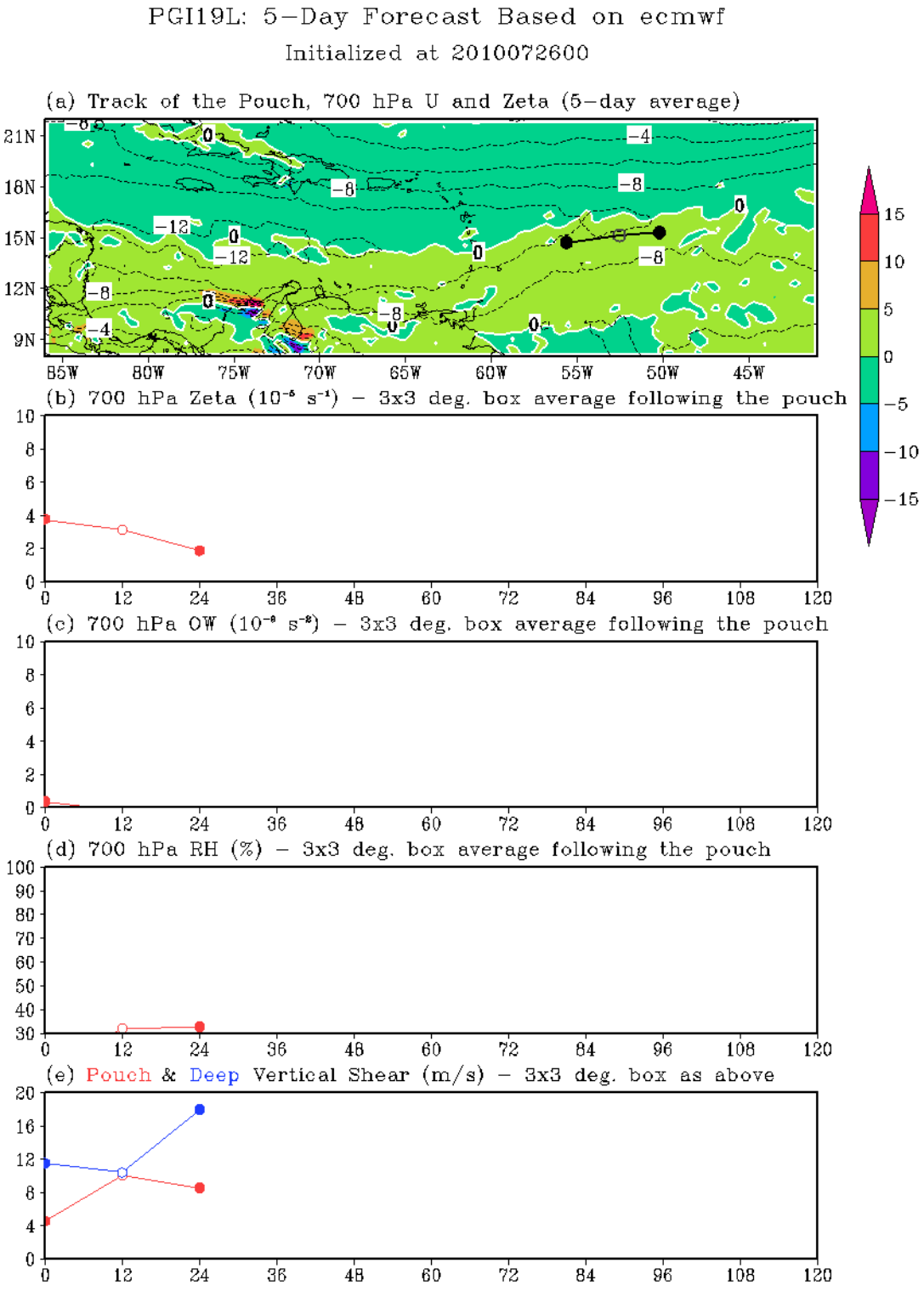
7b) CIMSS 850hPa vorticity



8) Hovmöller 5-day Diagram from Meteosat:



9a) Montgomery Analysis of PGI-19L in NOGAPS:



9b) Montgomery Analysis of PGI-20L in ECMWF: